

WHAT IS CLAIMED IS:

1. A power supply control system for supplying and starting a plurality of disk drive groups having at least one disk drive with an electric power, comprising:

a power source;

a plurality of power supply circuits for supplying said plurality of disk drive groups individually with the electric power from said power source; and

a control circuit for controlling said plurality of power supply circuits,

wherein said control circuit generates, when said power source is turned ON, a circuit signal for turning ON said plurality of power supply circuits sequentially, and

wherein said individual power supply circuits supply, when they receive said circuit signal, the corresponding disk drive groups with the electric power so that the starts of said plurality of disk drive groups may not timely overlap.

2. A power supply control system according to Claim 1,

wherein said control circuit outputs, when a first set time elapses after it outputted the circuit signal for turning ON the power supply circuit corresponding to a certain disk drive group, the circuit signal for turning ON the power supply circuit corresponding to the next disk drive group.

3. A power supply control system according to Claim 1,

wherein said control circuit outputs, simultaneously as a certain disk drive group completes its start, the circuit signal for turning ON the power supply circuit corresponding to the next disk drive group.

4. A power supply control system according to Claim 1,
wherein said control circuit outputs, after it outputted the circuit signal for turning ON a power supply circuit corresponding to a certain disk drive group, and at the earlier one of the instant when a first set time elapses and the instant when said certain disk drive group completed its start, the circuit signal for turning ON the power supply circuit corresponding to the next disk drive group.

5. A power supply control system according to Claim 2,
wherein said control circuit outputs, where said certain disk drive group did not start even with the power supply and when a second set time elapses after it outputted the circuit signal for turning ON the power supply circuit corresponding to said certain disk drive group, the circuit signal for turning the power supply circuit corresponding to the next disk drive group, and

wherein said second set time is shorter than said first set time.

6. A power supply control system according to Claim 3,
wherein said control circuit outputs, where said certain disk drive group did not start even with the power supply and when a second set time elapses after it outputted the circuit signal for turning ON the power supply circuit corresponding to said certain disk drive group, the circuit signal for turning the power supply circuit corresponding to the next disk drive group, and

wherein said second set time is shorter than the time necessary for starting one disk drive group.

7. A power supply control system according to Claim 4,
wherein said control circuit outputs, where said certain disk drive group did not start even with the power supply and when a second set time elapses after it outputted the circuit signal for turning ON the power supply circuit corresponding to said certain disk drive group, the circuit

signal for turning the power supply circuit corresponding to the next disk drive group, and

wherein said second set time is shorter than both said first set time and the time necessary for starting one disk drive group.

8. A power supply control system according to Claim 2,

wherein each of said disk drive groups outputs a disk drive start initialization signal when it initializes its start, and

wherein said control circuit includes:

first timer means reset with the circuit signal for turning ON the power supply circuit corresponding to a certain disk drive group, for outputting a first time lapse signal when a first reset time elapses after reset;

second timer means reset with the circuit signal for turning ON the power supply circuit corresponding to said certain disk drive group, for outputting a second time lapse signal before a second set time shorter than said first set time elapses after reset and where said disk drive start initialization signal is not received from said certain disk drive group, said first timer means being reset with said second time lapse signal;

first counter means increasing the counted value by 1 each time when said circuit signal is inputted, for designating the number of the disk drive group to be started;

first compare means for comparing, when said first and second time lapse signals are inputted, a preset maximum of the numbers of all disk drive groups and the number of the disk drive group designated by said first counter means, to output, where the number of the disk drive group designated by said first counter means is smaller than said preset maximum, the number of the disk drive group designated by said first counter means as the number of the disk drive group to be next

started; and

selector means for outputting the circuit signal for turning ON the power supply circuit corresponding to the number of said disk drive group to be next started.

9. A power supply control system according to Claim 8, wherein said first timer means includes:

a first oscillator for outputting pulse signals when said power source is turned ON;

second counter means reset with an input of at least one of the circuit signal from said selector means and said second time lapse signal from said second timer means, for counting said pulse signals from 0; and

second compare means for comparing the counted value of said second counter means with the set value set as said first set time, to output, when they coincide, the time lapse signal as said first time lapse signal.

10. A power supply control system according to Claim 8, wherein said second timer means includes:

a second oscillator for outputting pulse signals when said power source is turned ON;

switch means turned ON, when the circuit signal from said selector means is inputted, and OFF when the disk drive start initialization signal from said disk drive group is inputted;

third counter means reset with an input of at least one of the circuit signal from said selector means and the disk drive start initialization signal from said disk drive group, for counting said pulse signals, as inputted through said switch means, from 0; and

third compare means for comparing the counted value of said third counter means with the set value set as said second set time, to

output, when they coincide, the time lapse signal as said second time lapse signal.

11. A power supply control system,

wherein said control circuit according to Claim 8 is realized by: a data input unit; a data processing unit operated on the basis of predetermined programs; and a data storing unit.

12. A power supply control system according to Claim 3,

wherein each of said disk drive groups outputs a disk drive start initialization signal, when it initializes its start, and outputs a disk drive start completion signal, when it ends its start, and

wherein said control circuit includes:

second timer means reset with the circuit signal for turning ON the power supply circuit corresponding to said certain disk drive group, for outputting a second time lapse signal before a second set time elapses after reset and where said disk drive start initialization signal is not received from said certain disk drive group, said first timer means being reset with said second time lapse signal;

first counter means increasing the counted value by 1 each time when said circuit signal is inputted, for designating the number of the disk drive group to be started;

first compare means for comparing, when said disk drive start completion signal or said second time lapse signal is inputted, a preset maximum of the numbers of all disk drive groups and the number of the disk drive group designated by said first counter means, to output, where the number of the disk drive group designated by said first counter means is smaller than said preset maximum, the number of the disk drive group designated by said first counter means as the number of the disk drive group to be next started; and

selector means for outputting the circuit signal for turning ON the power supply circuit corresponding to the number of said disk drive group to be next started.

13. A power supply control system according to Claim 4, wherein each of said disk drive groups outputs a disk drive start initialization signal, when it initializes its start, and outputs a disk drive start completion signal, when it ends its start,

wherein said control circuit includes:

first timer means reset with either the circuit signal for turning ON the power supply circuit corresponding to a certain disk drive group or said disk drive start completion signal, for outputting a first time lapse signal when a first reset time elapses after reset;

second timer means reset with the circuit signal for turning ON the power supply circuit corresponding to said certain disk drive group, for outputting a second time lapse signal before a second set time elapses after reset and where said disk drive start initialization signal is not received from said certain disk drive group, said first timer means being reset with said second time lapse signal, said second timer means being reset with said second time lapse signal;

first counter means increasing the counted value by 1 each time when said circuit signal is inputted, for designating the number of the disk drive group to be started;

first compare means for comparing, when any of said disk drive start completion signal, said first time lapse signal and said second time lapse signal is inputted, a preset maximum of the numbers of all disk drive groups and the number of the disk drive group designated by said first counter means, to output, where the number of the disk drive group designated by said first counter means is smaller than said preset maximum, the number of the disk drive group designated by said first

counter means as the number of the disk drive group to be next started;
and

selector means for outputting the circuit signal for turning ON the power supply circuit corresponding to the number of said disk drive group to be next started.

14. A power supply control system according to Claim 13,
wherein said first timer means includes:

a first oscillator for outputting pulse signals when said power source is turned ON;

second counter means reset with an input of any of the circuit signal from said selector means, said second time lapse signal from said second timer means and said disk drive start completion signal, for counting said pulse signals from 0; and

second compare means for comparing the counted value of said second counter means with the set value set as said first set time, to output, when they coincide, the time lapse signal as said first time lapse signal.

15. A power supply control system,

wherein said control circuit according to Claim 13 is realized by:
a data input unit; a data processing unit operated on the basis of predetermined programs; and a data storing unit.

16. A power supply control method for controlling the power supply to a plurality of disk drive groups each having one or more disk drives, comprising the steps of:

initiating the start of a disk drive group of a certain number;

deciding, if a disk drive start initialization signal is received after the start initialization and before the lapse of a first set time, whether or not a second set time elapses after the start initialization;

deciding whether or not all the disk drive groups have completed their starts, if the disk drive start initialization signal is not received before the lapse of the first set time;

deciding whether or not all the disk drive groups have completed their starts, if the decision reveals the lapse of the second set time;

deciding again whether or not the second set time elapses after the start initialization, if the second set time does not elapse after the start initialization;

completing the starts of the disk drive groups if all the disk drive groups completed their starts; and

initiating the start of a next disk drive group if the starts of all the disk drive groups are not completed, and

wherein the foregoing steps are performed from the first disk drive group to the last disk drive group.

17. A power supply control method for supplying and starting a plurality of disk drive groups having at least one disk drives with an electric power, comprising the steps of:

initiating the start of a disk drive group;

deciding, if a disk drive start initialization signal is received after the start initialization and before the lapse of a first set time, whether or not a disk drive start completion signal is received after the start initialization;

deciding whether or not all the disk drive groups have completed their starts, if the disk drive start initialization signal is not received before the lapse of said first set time;

deciding whether or not all the disk drive groups have completed their starts, if the decision reveals that the reception of said disk drive start completion signal is received;

deciding again whether or not said disk drive start completion signal is received after the start initialization, if said disk drive start completion signal is not received;

completing the starts of the disk drive groups if the decision reveals that all the disk drive groups completed their starts; and

initiating the start of a next disk drive group if the starts of all the disk drive groups are not completed, and

wherein the foregoing steps are performed from the first disk drive group to the last disk drive group.

18. A power supply control method for supplying and starting a plurality of disk drive groups having at least one disk drives with an electric power, comprising the steps of:

initiating the start of a disk drive group;

deciding, if a disk drive start initialization signal is received after the start initialization and before the lapse of a first set time, whether or not a disk drive start completion signal is received;

deciding whether or not all the disk drive groups have completed their starts after the start initialization, if the disk drive start initialization signal is not received before the lapse of said first set time;

deciding whether or not all the disk drive groups have completed their starts, if the decision reveals that the reception of said disk drive start completion signal is received;

deciding again whether or not said second set time elapses after the start initialization, if said disk drive start completion signal is not received;

deciding whether or not all the disk drive groups have completed their starts, if said second set time elapses after the start initialization;

deciding again whether or not all the disk drive groups have completed their starts, if said second set time does not elapse after the

start initialization;

 completing the starts of the disk drive groups if all the disk drive groups completed their starts; and

 initiating the start of a next disk drive group if the starts of all the disk drive groups are not completed, and

 wherein the foregoing steps are performed from for all the disc drive groups from the first disk drive group.